DOCUMENT RESUME

ED 043 642 24 TE 002 089

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TITLE	A Test of the Empathy-Effective Communication Hypothesis.
INSTITUTION	Johns Hopkins Univ., Baltimore, Md. Center for the Study of Social Organization of Schools.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C. Bureau of Research.
REPORT NO	RR-84
BUREAU NO	BR-6-1610-03
PUB DATE	Oct 70
GRANT	OEG-2-7-061610-0207
NOTE	23p.
EDRS PRICE	EDRS Price MF-$0.25 HC-$1.25
DESCRIPTORS	*Codification, *Empathy, Hypothesis Testing, *Oral Communication, Oral Expression, *Role Perception, Verbal Communication

ABSTRACT

Psychologists and linguists often suggest that empathy or role-taking ability is important in the communication process because it enables a speaker to consider in advance the informational demands of his audience. Despite the vintage of the empathy-effective communication hypothesis, it has never been directly tested. In this study, empathy was measured by an objectively scored empathy scale; the communication process was represented by an encoding-decoding task (using abstract designs) to provide quantitative estimates of encoding and decoding ability. For 42 men and women, the average correlation between empathy and encoding skill was +.60, the correlation between empathy and decoding was +.14. Results from a second study tended to confirm these findings. (Sample designs from the encoding-decoding procedure, four tables of findings, and a list of references are provided.) (Author/JMC)

EDO 43642

BR 6-1610
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A TEST OF THE EMPATHY-EFFECTIVE COMMUNICATION HYPOTHESIS

Grant No. OEG 2-7-061610-0207

BR 61610-03

Research Report No. 84

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TE 002 089

October 1970

Published by the Center for Social Organization of Schools, supported in part as a research and development center by funds from the United States Office of Education, Department of Health, Education, and Welfare. The opinions expressed in this publication do not necessarily reflect the position or policy of the Office of Education, and no official endorsement by the Office of Education should be inferred.

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Abstract

Psychologists and linguists often suggest that empathy or role-taking ability is important in the communication process because it enables a speaker to consider in advance the informational demands of his audience. Despite the vintage of the empathy-effective communication hypothesis, it has never been directly tested. In this study empathy was measured by an objectively scored empathy scale; the communication process was represented by an encoding-decoding task (using abstract designs) to provide quantitative estimates of encoding and decoding ability. For 42 men and women, the average correlation between empathy and encoding skill was +.60, the correlation between empathy and decoding was +.14. Results from a second study tended to confirm these findings.

Acknowledgment

The authors wish to thank Dr. James Deese for his helpful comments concerning this paper.

A Test of the Empathy-Effective Communication Hypothesis

The ordinary person spends perhaps 70 percent of his time communicating with other people. An even greater proportion of a teacher's time is spent in this way, for, in a very real sense professional educators are professional communicators. Obviously, then, it is appropriate for educational researchers to examine those things about people that help or hinder attempts to communicate.

Psychologists have often postulated empathy or role-taking ability as an important determinant of communication skill (cf. Flavell, 1968; Mead, 1934; Piaget, 1959; Vygotsky, 1962). They typically argue that empathy permits a speaker to consider in advance the questions and informational demands of his audience; the more accurately he does this, the more efficiently can he transmit his intended message. Similarly, the more completely a listener is able to assume the role of the speaker, the more readily will he apprehend the speaker's message. It also follows that deficiencies in role-taking capacity may impede effective information exchange between persons. The limited conversational skills of children are frequently explained in this manner, and, in the extreme instance of role-taking deficiency, communication with psychotics may be blocked as a result of their inability to adopt alternative perspectives (cf. Cameron, 1963, p. 462).

The psychological literature concerning role-taking and language behavior is quite extensive; however, research dealing with the interaction between the two is less so (for an excellent research summary,

see Flavell, 1968). The present paper reports the results of a study designed to test the "empathy-effective communication hypothesis" using an objective measure of empathy (Hogan, 1969) and an encoding-decoding task to approximate the communication process. The experiment was arranged in such a manner that encoding and decoding abilities could be separately assessed.

Method

Subjects

Subjects were 27 male and 22 female university students, of whom 43 were in an introductory class in social psychology. They participated in the experiment prior to any discussion of related material in the course. Because of attrition and absence, not all subjects were able to take part in both phases of the experiment. Altogether, 41 subjects encoded and 41 decoded the stimuli, with 33 subjects doing both. For all but six subjects encoding and decoding were done in a classroom setting.

Materials

The stimuli for encoding and decoding were ten abstract designs chosen from the Barron-Welsh Art Scale (Barron & Welsh, 1952),[1] specifically items 4, 12, 13, 26, 50, 80, 83, 84, and 85 (see figure 1). The measure of role-taking ability was a 64-item, empirically-keyed empathy scale (Hogan, 1969).

Insert figure 1 about here

Procedure

Encoding. The abstract designs were printed, one to a page, in booklets with pages in one of five random orders. The experimenter read aloud the instructions, which appeared on the first page of the booklet, as the subject read them silently. Subjects were instructed

to "think of a name for each design and write that name on a card... The name you give each design should be such that another person could recognize the design from the name you have given it." In response to questioning, the experimenter added that the "name" could be like a short description, but that it should not be lengthy. Before the actual encoding began, the subjects were given 30 seconds to leaf through the booklets to familiarize themselves with the nature and variety of the stimuli. During the encoding they were required to name each design in the order in which it was presented. They were given 10 minutes to encode the pictures, writing each name on a separate file card.

Decoding. Before the decoding phase of the experiment, individualized packets of cards were made up for each decoding subject in the following manner. The ten encodings of each subject were individually typed on 30 cards, i.e., each encoding was reproduced three times. Packs of 30 cards were then prepared for each decoder. Each decoding pack contained three encoding of each stimulus, each encoding from a different subject other than the decoding subject, and the cards were arranged randomly. Decoding followed eight weeks after encoding.

At the time of decoding, each subject was given printed instructions and a sheet showing all ten designs along with his decoding pack of 30 cards. Subjects were not told there were three names for each picture in the packs. The instructions asked them to "match these names with the pictures they represent" by writing the number of the stimulus picture on the card. They were further instructed to decode the

cards in the order in which they appeared in the packs; 15 minutes were given for the decoding.

Of the eight subjects who were not present for the initial encoding, five were separately given the encoding-decoding sequence (the tasks were separated by eight weeks), but only their decodings were included in the final data analysis. The three others were given the decoding task without any previous encoding experience.

Analysis

Each encoding subject received an encoding ability score based on the number of his encodings correctly decoded by others (the maximum was 30, since each encoding was given to three different subjects for decoding). Each decoding subject was assigned a decoding score in accordance with the number of encodings he successfully decoded (maximum = 30). Scores for the three decoders who lacked encoding experience did not differ significantly from these of other decoders, therefore their scores were retained. The empathy scale was given to 45 of the 49 subjects.

Encodings were also scored for length (in words) and commonality. Commonality scores were derived from a content analysis of responses to each picture. Three judges analyzed encodings for commonality independently. They achieved unanimous agreement on 83 percent of their judgments, and two or more judges agreed on 99 percent of the judgments. Every encoding was then given a number corresponding to the frequency of that response in the total subject population. A

weighting procedure was employed which was similar to that used by Maclay and Newman (1960) for determining commonality. Thus, for example, 23 of 41 subjects gave a response containing "mitten" or "glove" to picture 4; thus a "mitten" or "glove" response to pciture 4 was assigned a commonality score of 23. Item scores were summed to obtain each subject's total commonality score.

Results

The means and standard deviations for empathy, encoding ability, decoding ability, length of encoding, and commonality of encoding are presented in Table 1, separately for men and women. Table 1 suggests that women were slightly better at decoding than men; no other differences between the sexes were significant.

Insert Table 1 about here

Table 2 presents correlations among encoding ability, decoding ability, length of encoding, commonality of encoding, and empathy.

Insert Table 2 about here

The numbers appearing in parentheses in Table 2 are correlations that have been corrected for attenuation.[2] There are four items of note in Table 2. First, length and commonality of encoding are unrelated to empathy. Second, although length of encoding and encoding ability are significantly correlated for men, this relationship disappears in the total sample. Third, it is somewhat surprising to note the modest (and in this case non-significant) correlation between encoding and decoding ability. Finally, there is a consistent and significant relationship between empathy and encoding ability, supporting the empathy-effective communication hypothesis.

Further Supporting Evidence

Data from a separate, unrelated study lend further support to the findings presented above.[3] Ss for the study were 24 men and 24 women from two Maryland state colleges (College A and College B). The 12 men and 12 women from College A were white, the men and women from College B were black. All Ss were given the empathy scale. They were then placed in like-sexed dyads, and the dyads performed three communication tasks, described in detail elsewhere (Baldwin & Garvey, 1970). Baldwin and Garvey analyzed their data using scores based on the performance of dyads. However, each dyad contained a "knower" and a "doer" who roughly correspond to an encoder and a decoder. For the present analysis subjects were assigned scores based on the dyad's performance while that person was serving as "knower."

Two of Baldwin and Garvey's tasks are of interest here. In the first, one member of the dyad (the encoder) was given a tinker-toy model of an organic chemical molecule; the second person (the decoder) was required to build an identical model following the instructions of the encoder. The number of mistakes found in the decoder's model at the end of the task could be considered as a function of the role-taking ability of the encoder; these mistakes were called "encoding errors" (this ignores the real possibility that errors can arise from decoding mistakes as well as faulty encoding). Each member of the dyad acted once as an encoder and once as a decoder. Subjects were assigned scores for "encoding errors" based on the number of mistakes made by their decoders.

A good communicator should be attentive to feedback from his audience. In the second task, the encoder was given a map on which a route was traced from "point A" to "point B." The second person, the decoder, was given a blank map and, under the encoder's directions, marked the path from "point A" to "point B." Each time an encoder gave a sequence of instructions over 30 words in length without ascertaining the decoder's comprehension, he was assigned 1 point for "ignoring feedback."

Table 3 presents means and standard deviations for empathy, "encoding errors," and "ignoring feedback," separately for each group in the sample. An analysis of variance indicated that the differences

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Insert Table 3 about here

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between schools for empathy and "ignoring feedback" were significant; the differences between sexes were not significant. Table 4 presents correlations between empathy scores, "encoding errors," and "ignoring

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Insert Table 4 about here

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feedback." For women from College A the correlation between empathy and "encoding errors" is zero because this group made no errors. Otherwise the correlations are all consistently negative as would be expected from the empathy-effective communication hypothesis. Within each group the correlations tend not to be significant, in part because of the small sample sizes (N = 12). When the groups are combined, however, the correlations become significant.

Discussion

Two previous studies produced results consistent with the findings presented here concerning the empathy-effective communication hypothesis (Feffer & Suchotliff, 1966; Krauss, Vivekananthan, & Weinheimer, 1968). However, the present study, by using quantitative indices of the relevant variables, provides a more precise estimate of the strength of the relationship between communication accuracy and role-taking. As suggested in Table 2, this relationship is dependable and moderately large, although far from perfect. It is reasonable to find only a moderate relationship between empathy and encoding ability, for, as Flavell (1968) observes, role-taking ability is not "a sufficient condition for the construction of an effective message not, in certain special cases perhaps, even a necessary one. It cannot be a sufficient condition because there are other, what appear to be different, skills which also contribute...an effective verbal message obviously presupposes a set of already developed verbal skills, for example, an adequate vocabulary, and the ability to construct clear sentences and arrange them in a communicatively useful sequence" (p. 11).

The difference in the correlations between empathy and the two coding abilities may also reflect the true state of nature. Empathy is regarded as an important technique for improving the message transmission of actors, public speakers, and teachers. However, the skills underlying empathic behavior are rarely taught in a didactic manner as a method for improving understanding. A "good listener" is typically seen as a patient sympathetic person who will hear out a

speaker and seldom challenge him. Most listeners probably spend their "listening" pauses in a conversation preparing their next response, often attending to the speaker only in order to pick up key words toward which they direct their rejoinders. A truly good listener, however, should be adept at tracking a wandering argument through unusual usages and non-sequiturs, in which case empathy might be important. A future study might attempt to teach empathic skills prior to assessing encoding and decoding abilities, to determine whether the relationship between empathy and decoding may be augmented by training.

The absence of a correlation between the commonality of an individual's encodings and his encoding score echoes the finding of Krauss, Vivekananthan, and Weinheimer (1968). Lantz and Stefflre (1964) also found inconsistent results in their study of the relationship between commonality of response and accuracy of message transmission. The explanation for these findings may be that there is no such thing as a consistent cognitive disposition to give modal responses; a commonality response tendency may be an artificial variable.

Results similar to our findings of no relationship between length of encoding and coding success were also found by Heider (reported in Heider, Cazden, and Brown, 1968).

Perhaps our most interesting finding is the low correlation between encoding and decoding ability. The relationship between these processes has often been discussed; some writers regard them as similar,

others see them as distinct. Chomsky (1957), for example, regards the speaker's task as the synthesis of an utterance and the hearer's task as the analysis of it, and "these two tasks...are essentially the same" (p. 48). Osgood (1963) suggests that encoding and decoding are mirror-image processes. In reference to a constituent structure diagram he writes, "Contrary to usual linguistic practice, in which the rewrite arrows and sequences within the tree are unidirectional... I have deliberately shown bidirectional arrows...In other words, sentence creators start at the trunk and end with the leaves, whereas sentence understanders begin with the leaves and hopefully end up at the trunk" (p. 736).

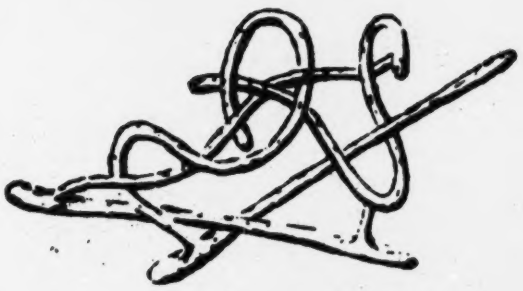
Bloomfield, on the other hand, after defining meaning as a function of the "speaker's situation" and the "hearer's response," observed that the former "will usually present a simpler aspect" than the latter (1933, p. 139). Zipf (1949) defined the roles of speaker and auditor separately and regarded them as having conflicting bases: the "speaker's economy" demands a minimum vocabulary (the Force of Unification) and the "auditor's economy" demands a maximum vocabulary (the Force of Diversification). Rosenberg and Cohen (1966) propose a two-stage communication process for the speaker and a single-stage process for the listener: "It is postulated that the speaker's referential process is a concatenation of two hypothetical psychological stages, termed <u>sampling</u> and <u>comparison</u>...The referential process of the listener is assumed to be similar to the comparison stage of the speaker" (p. 211).

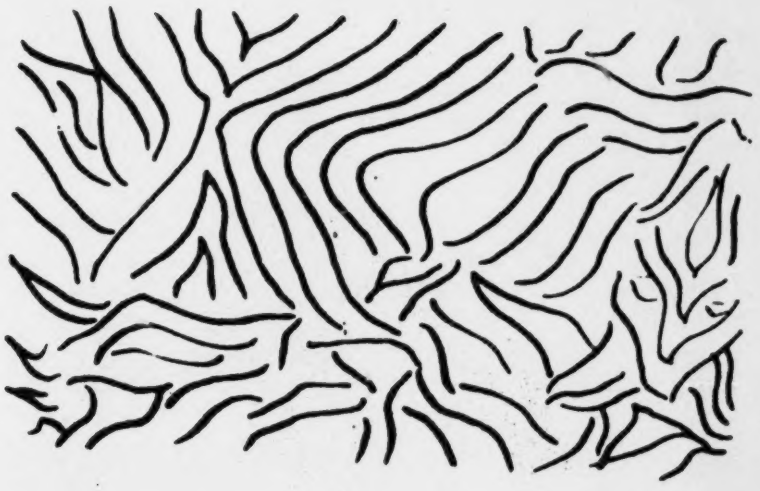
While opinion differs considerably concerning the similarity of the encoding and decoding processes, the available evidence suggests that the processes are distinct. Johnson and Gross (1968), for example, had speaker-listener pairs encode color chips for themselves and others, and found that "It was not the case that subjects who were good at understanding themselves were also good at understanding others, nor were 'good senders' necessarily 'good receivers.' Rather, it appears that speaking and listening skills form relatively separate and discrete components, contrary to Flavell's (1961) hypothesis concerning a generalized communication skill" (p. 261). Evidence presented in Table 2 of this paper further suggests the importance of maintaining a distinction between encoding and decoding ability.

What are the implications of this research for the teacher as communicator? The implications differ depending on whether the teacher is talking or listening (encoding or decoding). As an encoder the teacher should realize that when the student doesn't get the message it is not necessarily the student's fault. Rather, teachers should attend closely to the responses of the students and adjust their message-transmissions to the types of feedback they receive from their students. As a decoder, the teacher should not place limitations on the sort of responses he will accept from students; the teacher should be able to decode flexibly a variety of responses. In this manner the teacher can greatly facilitate both ends of the communication process.

Figure 1

Sample Items from the Encoding-Decoding Procedure





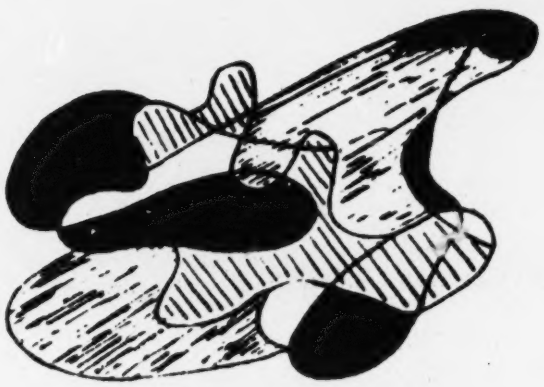


Table 1

Means and Standard Deviations for Variables Listed

	Men		Women		
Variables	Mean	S.D.	Mean	S.D.	t
Empathy	36.7[e]	6.14	39.5[d]	6.76	1.44
Encoding Ability	21.4[d]	3.51	21.3[a]	2.85	.10
Decoding Ability	20.5[c]	3.43	22.3[b]	2.93	1.76*
Length of Encoding	4.1	1.63[d]	3.9	1.17[a]	.96
Commonality of Encoding	102.4[d]	16.08	108.3[a]	17.87	1.08

Note: *: p<.10

a: N=19, b: N=20, c: N=21, d: N=22, e: N=23

Table 2

Correlations between Empathy and the Variables Listed

	Encoding Ability			Empathy		
	Men	Women	Average	Men	Women	Average
Encoding Ability	--------	--------	--------	.35(.54)*f	.43(.66)**d	.39(.60)***
Decoding Ability	.18(.32)[a]	.16(.29)[b]	.17(.31)	.04(.06)[c]	.16(.22)[e]	.10(.14)
Length of Encoding	.37**g	-.14	.04	-.25[d]	.13[f]	-.06
Commonality of Encoding	.20[g]	-.13[d]	.17	.00[f]	.16[d]	.08

Note: *: p<.10, **: p<.05, ***: p<.01, one-tail test

a: N=16, b: N=17, c: N=18, d: N=19, e: N=20, f: N=21, g: N=22

Table 3

Means and Standard Deviations for Variables Listed

	Empathy		Encoding Errors		Ignoring Feedback	
College A	Mean	S.D.	Mean	S.D.	Mean	S.D.
Men	41.0	5.39	.5	1.17	.8	1.22
Women	43.8	4.00	0.0	.00	.8	1.40
College B						
Men	39.4	2.00	1.6	2.23	1.3	1.29
Women	38.8	3.74	.9	2.57	2.1	2.54

Note: N=12 for each group; total N=48

Table 4

Correlations between Empathy Scores and Variables Listed

Group	Encoding Errors	Ignoring Feedback
College A		
Men[a]	-.23	-.18
Women[a]	.00	-.35
College B		
Men[a]	-.50**	-.29
Women[a]	-.17	-.25
Average[b]	-.22*	-.27**

Note: *: $p \leq .10$, one-tail test

**: $p \leq .05$, one-tail test

a: N=12, b: N=48

Footnotes

[1]The authors thank F. Barron, G. S. Welsh, and the Consulting Psychologists Press for permission to use these figures.

[2]In a sample of 50 undergraduates, the test-retest reliability of the empathy scale after a two-month interval was .84. The split-half reliabilities of the encoding and decoding scores, corrected by the Spearman-Brown formula, were .50 and .60 respectively.

[3]The authors thank Dr. Thelma Baldwin and Dr. Catherine Garvey for making available the data used in the following analyses.

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